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NEWS 15	OCT 27	EPFULL enhanced with additional content

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FILE 'HOME' ENTERED AT 09:10:52 ON 07 NOV 2005

=> FIL MEDLINE, BIOSIS, EMBASE

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FILE 'MEDLINE' ENTERED AT 09:11:05 ON 07 NOV 2005

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=> s PSMA
L1          841 PSMA

=> s l1 and antibod?
L2          335 L1 AND ANTIBOD?

=> s l2 and isolat?
L3           36 L2 AND ISOLAT?

=> duplicate remove
ENTER L# LIST OR (END):l3
DUPLICATE PREFERENCE IS 'MEDLINE, BIOSIS, EMBASE'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
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L4            20 DUPLICATE REMOVE L3 (16 DUPLICATES REMOVED)

=> display l4
ENTER ANSWER NUMBER OR RANGE (1):1-20
ENTER DISPLAY FORMAT (FILEDEFAULT):ti

L4   ANSWER 1 OF 20      MEDLINE on STN
TI   The homodimer of prostate-specific membrane antigen is a functional target
     for cancer therapy.

L4   ANSWER 2 OF 20      MEDLINE on STN
TI   Further investigation of the epitope recognized by the new monoclonal
     antibody 2C9.

L4   ANSWER 3 OF 20  EMBASE  COPYRIGHT (c) 2005 Elsevier B.V. All rights
     reserved on STN
TI   Session II: Tumor antigens - Prostate cancer antigens and vaccines.

L4   ANSWER 4 OF 20  BIOSIS  COPYRIGHT (c) 2005 The Thomson Corporation  on STN
TI   Immunotherapy of cancer through expression of truncated tumor or
     tumor-associated antigen.

L4   ANSWER 5 OF 20      MEDLINE on STN
TI   Cloning and expression of extracellular domain of prostate specific
     membrane antigen in Escherichia coli and preparation of polyclonal
     antibody.

L4   ANSWER 6 OF 20      MEDLINE on STN                    DUPLICATE 1
TI   In vivo model mimicking natural history of dog prostate cancer using
     DPC-1, a new canine prostate carcinoma cell line.

L4   ANSWER 7 OF 20      MEDLINE on STN                    DUPLICATE 2
TI   Identification and characterization of circulating prostate carcinoma
     cells.

L4   ANSWER 8 OF 20  EMBASE  COPYRIGHT (c) 2005 Elsevier B.V. All rights
     reserved on STN
TI   Molecular and immunohistochemical staging of men with seminal vesicle
     invasion and negative pelvic lymph nodes at radical prostatectomy.

L4   ANSWER 9 OF 20      MEDLINE on STN                    DUPLICATE 3
TI   Isolation and characterization of monoclonal antibodies
```

specific for protein conformational epitopes present in prostate-specific membrane antigen (**PSMA**).

L4 ANSWER 10 OF 20 MEDLINE on STN DUPLICATE 4
TI Comparison of telomerase activity and GSTP1 promoter methylation in ejaculate as potential screening tests for prostate cancer.

L4 ANSWER 11 OF 20 MEDLINE on STN DUPLICATE 5
TI Generation of a baculovirus recombinant prostate-specific membrane antigen and its use in the development of a novel protein biochip quantitative immunoassay.

L4 ANSWER 12 OF 20 EMBASE COPYRIGHT (c) 2005 Elsevier B.V. All rights reserved on STN
TI **Isolation** and characterization of monoclonal **antibodies** specific for the extracellular domain of prostate specific membrane antigen.

L4 ANSWER 13 OF 20 MEDLINE on STN
TI Expression and purification of prostate-specific membrane antigen in the baculovirus expression system and recognition by prostate-specific membrane antigen-specific T cells.

L4 ANSWER 14 OF 20 MEDLINE on STN
TI **PSMA** mimotope **isolated** from phage displayed peptide library can induce **PSMA** specific immune response.

L4 ANSWER 15 OF 20 MEDLINE on STN DUPLICATE 6
TI Detection of prostatic specific membrane antigen messenger RNA using immunobead reverse transcriptase polymerase chain reaction.

L4 ANSWER 16 OF 20 MEDLINE on STN
TI Identification, purification, and subcellular localization of prostate-specific membrane antigen PSM' protein in the LNCaP prostatic carcinoma cell line.

L4 ANSWER 17 OF 20 MEDLINE on STN DUPLICATE 7
TI **Isolation** and characterization of monoclonal **antibodies** specific for the extracellular domain of prostate specific membrane antigen.

L4 ANSWER 18 OF 20 MEDLINE on STN DUPLICATE 8
TI Molecular characterization of human brain N-acetylated alpha-linked acidic dipeptidase (NAALADase).

L4 ANSWER 19 OF 20 MEDLINE on STN DUPLICATE 9
TI Prostate cancer and prostate bed SPECT imaging with ProstaScint: semiquantitative correlation with prostatic biopsy results.

L4 ANSWER 20 OF 20 MEDLINE on STN DUPLICATE 10
TI Measurement of prostate-specific membrane antigen in the serum with a new **antibody**.

=> display l4
ENTER ANSWER NUMBER OR RANGE (1):1-20
ENTER DISPLAY FORMAT (FILEDEFAULT):all

L4 ANSWER 1 OF 20 MEDLINE on STN
AN 2003507354 MEDLINE
DN PubMed ID: 14583590
TI The homodimer of prostate-specific membrane antigen is a functional target for cancer therapy.
AU Schulke Norbert; Varlamova Olga A; Donovan Gerald P; Ma Dangshe; Gardner

Jason P; Morrissey Donna M; Arrigale Robert R; Zhan Cenchen; Chodera Amy J; Surowitz Kenneth G; Maddon Paul J; Heston Warren D W; Olson William C

CS Progenics Pharmaceuticals, Inc., and PSMA Development Company, LLC, Tarrytown, NY 10591, USA.. nschuelke@progenics.com

NC CA 91746 (NCI)
CA 92947 (NCI)
CA 96075 (NCI)

SO Proceedings of the National Academy of Sciences of the United States of America, (2003 Oct 28) 100 (22) 12590-5.
Journal code: 7505876. ISSN: 0027-8424.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200401

ED Entered STN: 20031030
Last Updated on STN: 20040106
Entered Medline: 20040105

AB Prostate-specific membrane antigen (**PSMA**) is a type 2 integral membrane glycoprotein that serves as an attractive target for cancer immunotherapy by virtue of its abundant and restricted expression on the surface of prostate carcinomas and the neovasculature of most other solid tumors. However, relatively little is known about the molecular structure of this target. Here, we report that **PSMA** is expressed on tumor cells as a noncovalent homodimer. A truncated **PSMA** protein, lacking transmembrane and cytoplasmic domains, also formed homodimers, indicating that the extracellular domain is sufficient for dimerization. **PSMA** dimers but not monomers displayed a native conformation and possessed high-level carboxypeptidase activity. A unique dimer-specific epitope was identified by using one of a panel of novel mAbs. When used to immunize animals, dimer but not monomer elicited **antibodies** that efficiently recognized **PSMA**-expressing tumor cells. These findings on **PSMA** structure and biology may have important implications for active and passive immunotherapy of prostate and other cancers.

CT Check Tags: Male
3T3 Cells
Animals
Antibodies, Monoclonal
*Antigens, Surface: CH, chemistry
Antigens, Surface: GE, genetics
Antigens, Surface: IP, isolation & purification
*Antineoplastic Agents: TO, toxicity
CHO Cells
Cell Membrane: DE, drug effects
Cell Membrane: EN, enzymology
Dimerization
*Glutamate Carboxypeptidase II: CH, chemistry
Glutamate Carboxypeptidase II: GE, genetics
Glutamate Carboxypeptidase II: IP, isolation & purification
Hamsters
Humans
Mice
Prostatic Neoplasms: EN, enzymology
Recombinant Proteins: CH, chemistry
Recombinant Proteins: IP, isolation & purification
Research Support, U.S. Gov't, P.H.S.
Transfection
Tumor Cells, Cultured

CN 0 (**Antibodies**, Monoclonal); 0 (Antigens, Surface); 0 (Antineoplastic Agents); 0 (Recombinant Proteins); EC 3.4.17.21 (Glutamate Carboxypeptidase II); EC 3.4.17.21 (glutamate carboxypeptidase II, human)

L4 ANSWER 2 OF 20 MEDLINE on STN

AN 2003419045 MEDLINE
DN PubMed ID: 12887366
TI Further investigation of the epitope recognized by the new monoclonal **antibody** 2C9.
AU Kato Keitaro; Yoshikawa Kazuhiro; Taki Tomohiro; Shitara Kenya; Nakamura Kazuyasu; Hirota Maiko; Hanai Nobuo; Nakamura Kogenta; Kokubo Hiroto; Mitsui Kenji; Yamada Yoshiaki; Honda Nobuaki; Ueda Ryuzo; Saga Shinsuke; Fukatsu Hidetoshi
CS Department of Urology, Aichi Medical University School of Medicine, Nagakute, Aichi, Japan.
SO International journal of urology : official journal of the Japanese Urological Association, (2003 Aug) 10 (8) 439-44.
Journal code: 9440237. ISSN: 0919-8172.
CY Australia
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200401
ED Entered STN: 20030909
Last Updated on STN: 20040116
Entered Medline: 20040115
AB OBJECTIVE: We established a new monoclonal **antibody** (2C9) that reacted with prostate tissue. The immunohistochemical reactivity of this **antibody** is similar to anti-prostate-specific membrane antigen (**PSMA**). Herein, we report the antigenic determinant of 2C9 **antibody**. METHODS: The reactivity of the **antibody** was characterized by immunohistochemical staining and the antigen target was characterized by amino acid sequencing after immuno-affinity purification from an LNCaP cell lysate and cloning of a cDNA using a mammalian expression cDNA cloning system. RESULTS: The amino acid and nucleotide sequences for the antigen molecule recognized with 2C9 monoclonal **antibody** demonstrated identity with **PSMA**. CONCLUSION: The target molecule of the 2C9 monoclonal **antibody** is **PSMA**, pointing to future diagnostic and therapeutic applications.
CT Check Tags: Male
Amino Acid Sequence
Antibodies, Monoclonal: CH, chemistry
***Antibodies, Monoclonal: IM, immunology**
Antibodies, Monoclonal: IP, isolation & purification
Base Sequence
Blotting, Northern
Cell Line, Tumor: IM, immunology
Cell Line, Tumor: ME, metabolism
Clone Cells: IM, immunology
DNA, Complementary: GE, genetics
DNA, Complementary: IP, isolation & purification
Epitope Mapping: MT, methods
*Epitopes: AN, analysis
Humans
Molecular Sequence Data
Molecular Weight
Prostate: CH, chemistry
Prostate: IM, immunology
*Prostate-Specific Antigen: AN, analysis
Prostate-Specific Antigen: CH, chemistry
Prostatic Neoplasms: CH, chemistry
Prostatic Neoplasms: GE, genetics
*Prostatic Neoplasms: IM, immunology
Research Support, Non-U.S. Gov't
Sequence Analysis, Protein
Tumor Markers, Biological: GE, genetics
*Tumor Markers, Biological: IM, immunology
CN 0 (**Antibodies**, Monoclonal); 0 (DNA, Complementary); 0 (Epitopes); 0 (Tumor Markers, Biological); EC 3.4.21.77 (Prostate-Specific

Antigen)

L4 ANSWER 3 OF 20 EMBASE COPYRIGHT (c) 2005 Elsevier B.V. All rights reserved on STN
AN 2005387607 EMBASE
TI Session II: Tumor antigens - Prostate cancer antigens and vaccines.
AU Salgaller M.L.; Elgamal A.-A.; Bosch M.; Lodge A.; Shankar G.; Boynton A.; Belldegrun A.; Logothetis C.; Papandreou C.
CS Dr. M.L. Salgaller, Northwest Biotherapeutics, Inc., Seattle, WA, United States
SO Cancer Immunology, Immunotherapy, (2003) Vol. 52, No. SUPPL. 1, pp. S8-S9+S27.
ISSN: 0340-7004 CODEN: CIIMDN
CY Germany
DT Journal; Conference Article
FS 016 Cancer
026 Immunology, Serology and Transplantation
028 Urology and Nephrology
037 Drug Literature Index
038 Adverse Reactions Titles
LA English
SL English
ED Entered STN: 20050915
Last Updated on STN: 20050915
AB The clinical development of prostate cancer vaccines presents several challenges. Reagents are more limited and difficult to obtain as compared with other tumor types. The advanced age of the patient population presents the researcher with subjects having diminished immune systems and who are often less willing to undergo procedures for research purposes. Consequently, the majority of research has involved those cancers for which tumor and immune cells are readily available. Despite these hurdles, new and novel approaches are improving the poor overall survival rates through the development of antigen-based treatment options. These efforts are particularly important in the realm of hormone-refractory prostate cancer (HRPC), since no therapy exists with significant clinical impact. This is a major issue for the 36,000 men who will die from the disease annually, despite transient responses to secondary treatment such as hormone ablation therapy. During the past few years, candidate target antigens for experimental vaccines have been identified in several laboratories. These include oncogenes, overexpressed proteins, and carbohydrates. Three of the furthest in clinical development are well-established clinical markers of prostate cancer: prostate-specific membrane antigen (**PSMA**), prostate-specific antigen (PSA), and prostatic acid phosphatase (PAP). Following conclusive preclinical evidence indicating that the human body responds immunologically to prostate antigens, clinical trials have been underway for many years with **PSMA**, PSA, and PAP as targets. We investigated the capacity of a vaccine composed of autologous dendritic cells (DC), pulsed ex vivo with recombinant **PSMA** (rPS-MA), to safely generate clinically meaningful antitumor immune responses in HRPC patients. In 2000 and 2001, 32 patients with metastatic or non-metastatic HRPC were enrolled in a phase I/II clinical trial. Their peripheral blood mononuclear cells were **isolated** by leukapheresis, matured to DC by in vitro culture with maturation factors (GM-CSF, IL-4, and inactivated BCG) for up to 7 days, followed by rPSMA loading and harvesting of the vaccine. Patients received four intradermal treatments of 5, 10, or 20-million rPSMA-loaded mature DC at monthly intervals, followed by up to a total of 6 months of observation. Measurement of serum anti-**PSMA antibodies**, **PSMA**-stimulated lymphocyte proliferation, and delayed-type hypersensitivity (DTH) skin testing were carried out before, during, and after vaccination. Clinical responses were assessed by CT/bone scans and hematochemical laboratory tests, including PSA levels. More than 140 total vaccine injections were well tolerated; no clinical signs of autoimmunity or serious adverse events were observed. Overall, 54% of

patients achieved stability of their disease at >6 months follow-up, as assessed by radiographic criteria, and 83% of patients had a **PSMA** -specific immune response, 92% of patients with stable disease had a **PSMA**-specific immune response, and 46% of patients had a decrease in PSA velocity. Compared to baseline, 93% of 27 evaluable patients converted to DTH-positive against the BCG component of the vaccine. Due to these promising initial findings we have initiated a double-blind, placebo-controlled phase III clinical trial.

CT Medical Descriptors:
*prostate cancer: DT, drug therapy
prostatectomy
cancer surgery
bone metastasis
cancer cell culture
T lymphocyte
medical research
cancer chemotherapy
immune response
cancer survival
quality of life
dendritic cell
peripheral blood mononuclear cell
skin irritation: SI, side effect
injection site reaction: SI, side effect
headache: SI, side effect
fatigue: SI, side effect
human
clinical trial
conference paper
priority journal
Drug Descriptors:
*tumor antigen
*cancer vaccine: AE, adverse drug reaction
*cancer vaccine: CT, clinical trial
*cancer vaccine: DT, drug therapy
tumor rejection antigen
tumor suppressor protein
prostate antigen
acid phosphatase prostate isoenzyme
prostate specific antigen
prostate specific membrane antigen: DT, drug therapy
prostate specific membrane antigen: DL, intradermal drug administration
prostate specific membrane antigen: PD, pharmacology
recombinant antigen: DT, drug therapy
recombinant antigen: DL, intradermal drug administration
recombinant antigen: PD, pharmacology
dendritic cell vaccine: AE, adverse drug reaction
dendritic cell vaccine: CT, clinical trial
dendritic cell vaccine: DT, drug therapy

L4 ANSWER 4 OF 20 BIOSIS on STN
AN 2002:338468 BIOSIS
DN PREV200200338468
TI Immunotherapy of cancer through expression of truncated tumor or tumor-associated antigen.
AU Mincheff, Milcho S. [Inventor, Reprint author]; Loukinov, Dmitri I. [Inventor]; Zoubak, Serguei [Inventor]
CS Rockville, MD, USA
ASSIGNEE: American Foundation for Biological Research, Inc., Rockville, MD, USA
PI US 6387888 20020514
SO Official Gazette of the United States Patent and Trademark Office Patents, (May 14, 2002) Vol. 1258, No. 2. http://www.uspto.gov/web/menu/patdata.htm

l. e-file.
CODEN: OGUPE7. ISSN: 0098-1133.
DT Patent
LA English
ED Entered STN: 12 Jun 2002
Last Updated on STN: 12 Jun 2002
AB DNA constructs for truncated forms of cancer-specific or cancer associated antigens are included in plasmid or viral expression vectors. The rationale to use constructs for truncated and not for full-size molecules is to eliminate side effects (toxicity, signal transduction etc.) arising from expressed proteins and/or, in cases where such molecules are expressed on the membrane, secreted, or released in the extracellular environment, to prevent formation of **antibodies** against them. The extracellular portion of the human prostate specific membrane specific antigen (XC-**PSMA**) has been cloned. Patients were treated either by injection of DNA coding for XC-**PSMA** in a mammalian expression vector under the CMV promoter or/and by a replication-defective adenoviral vector (Ad5)hat contains an expression cassette for the XC-**PSMA**. In a third method dendritic cells are **isolated** from a patient and are treated by exposure to the plasmid or adenovirus used in the previous two treatments. The dendritic cells are then injected into the patient. In some patients, the progression of metastatic prostate cancer is retarded or stopped.
NCL 514044000
CC Pathology - Therapy 12512
Neoplasms - Pathology, clinical aspects and systemic effects 24004
Neoplasms - Therapeutic agents and therapy 24008
IT Major Concepts
Methods and Techniques; Oncology (Human Medicine, Medical Sciences)
IT Methods & Equipment
cancer immunotherapy: therapeutic method

L4 ANSWER 5 OF 20 MEDLINE on STN
AN 2002240387 MEDLINE
DN PubMed ID: 11977596
TI Cloning and expression of extracellular domain of prostate specific membrane antigen in Escherichia coli and preparation of polyclonal **antibody**.
AU Ye Chuan-Zhong; Zhao Xu-Dong; Zhang Fang-Lin; Lin Zhen; Xu Ming; Zhang Yong-Kang; Chen Chang-Qing
CS Department of Urology, Zhongshan Hospital, Medical Center of Fudan University, Shanghai 200032, China.. chuanzhong@mycity.com.cn
SO Sheng wu gong cheng xue bao = Chinese journal of biotechnology, (2002 Jan) 18 (1) 35-9.
Journal code: 9426463. ISSN: 1000-3061.
CY China
DT Journal; Article; (JOURNAL ARTICLE)
LA Chinese
FS Priority Journals
EM 200206
ED Entered STN: 20020430
Last Updated on STN: 20020625
Entered Medline: 20020624
AB Human Prostate Specific Membrane Antigen(**PSMA**) cDNA was amplified using total RNA extracted from prostate carcinoma tissue by RT-PCR. The cDNA fragment of extracellular domain of **PSMA** (edPSMA) gene was amplified by PCR and cloned into expression vector pMAL-c2x. Sequence analysis of both **PSMA** and edPSMA revealed identity to the GenBank reported. The edPSMA was expressed in E. coli as part of a fusion protein with MBP as the induction of IPTG. Western blot analysis showed the recombinant protein could react with **PSMA** monocloned **antibodies** 4G5. MBP-edPSMA fusion protein were purified by amylose resin affinity chromatography and showed to be homogeneity in SDS-PAGE(120 kD). BALB/C mice were immunized with the

purified protein for the preparation of polyclonal **antibody**. The polyclonal **antibody**, which had a title of 1:12,800, were indicated the specificity to prostate tissue.

CT Animals
***Antibodies: IM, immunology**
Antibody Formation
*Antigens, Surface
*Carboxypeptidases: BI, biosynthesis
Carboxypeptidases: GE, genetics
Carboxypeptidases: IM, immunology
Carboxypeptidases: IP, isolation & purification
Chromatography, Affinity: MT, methods
Cloning, Molecular
DNA, Complementary: GE, genetics
English Abstract
Escherichia coli: GE, genetics
*Gene Expression
Genetic Vectors
Glutamate Carboxypeptidase II
Humans
Mice
Mice, Inbred BALB C
Protein Structure, Tertiary: GE, genetics
Protein Structure, Tertiary: PH, physiology
Recombinant Fusion Proteins: BI, biosynthesis
Recombinant Fusion Proteins: GE, genetics
Recombinant Fusion Proteins: IM, immunology
Recombinant Fusion Proteins: IP, isolation & purification
Research Support, Non-U.S. Gov't
Reverse Transcriptase Polymerase Chain Reaction: IS, instrumentation

CN 0 (**Antibodies**); 0 (Antigens, Surface); 0 (DNA, Complementary); 0 (Genetic Vectors); 0 (Recombinant Fusion Proteins); EC 3.4.- (Carboxypeptidases); EC 3.4.17.21 (Glutamate Carboxypeptidase II); EC 3.4.17.21 (glutamate carboxypeptidase II, human)

L4 ANSWER 6 OF 20 MEDLINE on STN DUPLICATE 1
AN 2001156016 MEDLINE
DN PubMed ID: 11170126
TI In vivo model mimicking natural history of dog prostate cancer using DPC-1, a new canine prostate carcinoma cell line.
AU Anidjar M; Villette J M; Devauchelle P; Delisle F; Cotard J P; Billotey C; Cochand-Priollet B; Copin H; Barnoux M; Triballeau S; Rain J D; Fiet J; Teillac P; Berthon P; Cussenot O
CS Centre de Recherche pour les Pathologies Prostatiques, Evry, France.
SO Prostate, (2001 Jan 1) 46 (1) 2-10.
Journal code: 8101368. ISSN: 0270-4137.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200103
ED Entered STN: 20010404
Last Updated on STN: 20010404
Entered Medline: 20010322
AB BACKGROUND: Dog prostate cancer is usually considered to be highly relevant to human prostate cancer. We report the **isolation** of a new canine prostate cancer epithelial cell line designated DPC-1. METHODS: Primary cultures were established from a canine poorly differentiated prostatic adenocarcinoma. Population doubling time was determined by counting nuclei after cell lysis. Tumorigenicity was assessed in nude mice and in one adult immunodeficient dog. Immunoscintigraphy was performed in both models using a monoclonal **antibody** (mAb) raised against the [44-62] sequence of human **PSMA**. RESULTS: DPC-1 cells have a rapid growth in vitro (doubling

time, 27 hr) which is not stimulated by androgens. In addition, DPC-1 displays immunoreactivity to human PSA and **PSMA**. DPC-1 was found to be highly tumorigenic not only in nude mice but also for the first time after orthotopic seeding in an immunodeficient dog. This allograft mimicked, in a compressed form, the aggressive biological behavior of spontaneous dog prostate adenocarcinoma. Immunoscintigraphy using a (131)Iodine-labeled **PSMA** mAb clearly visualized induced tumors in nude mice and in the dog allograft. CONCLUSIONS: This study suggests that DPC-1 may constitute a powerful model for assessing new diagnostic and/or therapeutic tools in the management of prostate cancer. Copyright 2001 Wiley-Liss, Inc.

CT Check Tags: Male
*Adenocarcinoma: PA, pathology
Adenocarcinoma: RI, radionuclide imaging
Animals
Antibodies, Monoclonal
Dihydrotestosterone: CH, chemistry
Disease Models, Animal
Dogs
Humans
Immunohistochemistry
Iodine Radioisotopes
Mice
Mice, Nude
Microscopy, Fluorescence
Microscopy, Phase-Contrast
*Prostatic Neoplasms: PA, pathology
Prostatic Neoplasms: RI, radionuclide imaging
*Tumor Cells, Cultured: PA, pathology
Tumor Cells, Cultured: RI, radionuclide imaging

RN 521-18-6 (Dihydrotestosterone)
CN 0 (**Antibodies**, Monoclonal); 0 (Iodine Radioisotopes)

L4 ANSWER 7 OF 20 MEDLINE on STN DUPLICATE 2
AN 2000329861 MEDLINE
DN PubMed ID: 10870062
TI Identification and characterization of circulating prostate carcinoma cells.
AU Wang Z P; Eisenberger M A; Carducci M A; Partin A W; Scher H I; Ts'o P O
CS Cell Works Inc., Baltimore, MD 21227-2349, USA.
SO Cancer, (2000 Jun 15) 88 (12) 2787-95.
Journal code: 0374236. ISSN: 0008-543X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 200007
ED Entered STN: 20000728
Last Updated on STN: 20000728
Entered Medline: 20000719

AB BACKGROUND: Analysis of prostate carcinoma cells **isolated** from the peripheral blood suggested a classification based on three categories. METHODS: Centrifugation density gradients and magnetic cell sorting were used to **isolate** circulating prostate carcinoma cells from peripheral blood. Immunocytochemistry staining and fluorescent in situ hybridization allowed characterization of **isolated** cancer cells. RESULTS: Terminal cells can be divided into 3 classes: 1) large, buoyant, fragile cells with a large nucleus that were captured in a 1.068 g/mL gradient; 2) enucleate cells (4, 6-diamidino-2-phenylindole [DAPI] negative) that were positive for cytokeratin and **PSMA** **antibodies**; and 3) cellular debris exhibiting cytokeratin and **PSMA** positive staining as well as nuclear debris identified by DAPI staining, which included cytoplasmic debris. Growing cells also exhibited three morphologic characteristics: those possessing stem

cell-like morphology and characteristics such as small size, high density, developed cytokeratin systems, **PSMA** expression, and aneuploidy; those in M phase; and cell clusters. The majority of **isolated** cells exhibited intermediate characteristics and thus comprised the third group of circulating cancer cells. CONCLUSIONS: Although the significance of the cluster remains undetermined, observation suggests that the cluster has the ability to circulate as a microtumor and subsequently arrest in the small veins and capillaries. It is hypothesized that the clusters could escape certain facets of immune surveillance and possibly gain a selective growth advantage over single cells in a distant site. Further hypothesis proposes that arrested cells recruit growth-promoting nutrients, which would result in the invasion of local blood vessels and vascularization.

CT Check Tags: Male
Aged
Aged, 80 and over
Cell Division
Humans
Immunohistochemistry
In Situ Hybridization, Fluorescence
Middle Aged
*Neoplasm Circulating Cells: CL, classification
Neoplasm Circulating Cells: PA, pathology
Neoplasm Circulating Cells: UL, ultrastructure
Neoplasm Metastasis
Prognosis
*Prostatic Neoplasms: PA, pathology
Research Support, Non-U.S. Gov't

L4 ANSWER 8 OF 20 EMBASE
AN 2001008412 EMBASE
TI Molecular and immunohistochemical staging of men with seminal vesicle invasion and negative pelvic lymph nodes at radical prostatectomy.
AU Potter S.R.; Mangold L.A.; Shue M.J.; Taylor D.C.; Lecksell K.L.; Epstein J.I.; Walsh P.C.; Partin A.W.
CS Dr. A.W. Partin, Johns Hopkins Hospital, Department of Urology, Marburg-205A, 600 North Wolfe Street, Baltimore, MD 21287-2101, United States. apartin@jhmi.edu
SO Cancer, (15 Dec 2000) Vol. 89, No. 12, pp. 2577-2586.
Refs: 34
ISSN: 0008-543X CODEN: CANCAR
CY United States
DT Journal; Article
FS 005 General Pathology and Pathological Anatomy
016 Cancer
028 Urology and Nephrology
029 Clinical Biochemistry
LA English
SL English
ED Entered STN: 20010119
Last Updated on STN: 20010119
AB BACKGROUND. Patients with seminal vesicle invasion (SVI) at radical retropubic prostatectomy (RRP) have a poor prognosis. Routine microscopic examination of pelvic lymph nodes (LNs) can miss small metastases and, thereby, confuse tumor staging and clinical decision-making. The authors used immunohistochemical and molecular methods to examine archival paraffin-embedded LNs of men who had undergone RRP for clinically localized prostate carcinoma and who had tumors demonstrating SVI and negative LNs at surgery. METHODS. Between June 1982 and June 1997, 2151 consecutive men underwent RRP for clinically localized prostate carcinoma. Of these, 109 (5.1%) tumors had SVI with negative LNs. The actuarial likelihood of having a tumor that was undetectable by testing

prostate-specific antigen (PSA) 5 and 10 years after surgery was 45% and 29%, respectively, for men with **isolated** SVI. Archival LN specimens were available for 102 men who-had **isolated** SVI. Reverse transcription polymerase chain reaction (RT-PCR) was performed for PSA and prostate-specific membrane antigen (**PSMA**). All specimens were examined concurrently by immunohistochemistry (IHC). RESULTS: Careful reevaluation of pelvic LNs demonstrated metastases in 9 (8.8%) men originally classified as metastasis-free. Reevaluation by hematoxylin and eosin (H&E) staining identified three previously unrecognized cases of LN metastases. IHC identified six cases, three of which were missed by H&E. RT-PCR identified four cases, three of which were not revealed by other methods. CONCLUSIONS. The poor prognosis of patients with SVI does not seem due to occult LN metastases, The low yield of unsuspected foci of prostate carcinoma in the LNs of men with SVI and negative LNs by routine staging does not justify IHC or molecular examination to find occult carcinoma. .COPYRGT. 2000 American Cancer Society.

CT Medical Descriptors:
*prostate carcinoma: SU, surgery
*cancer staging
*lymph node metastasis: CO, complication
*lymph node metastasis: DI, diagnosis
immunohistochemistry
molecular biology
seminal vesicle disease: DI, diagnosis
tumor localization
reverse transcription polymerase chain reaction
intermethod comparison
antibody labeling
human
male
major clinical study
controlled study
human cell
article
priority journal
Drug Descriptors:
hematoxylin: EC, endogenous compound
eosin: EC, endogenous compound

RN (hematoxylin) 517-28-2; (eosin) 17372-87-1, 51395-88-1, 548-26-5

L4 ANSWER 9 OF 20 MEDLINE on STN DUPLICATE 3
AN 2001043108 MEDLINE
DN PubMed ID: 10952413
TI **Isolation** and characterization of monoclonal **antibodies** specific for protein conformational epitopes present in prostate-specific membrane antigen (**PSMA**).
AU Tino W T; Huber M J; Lake T P; Greene T G; Murphy G P; Holmes E H
CS Northwest Biotherapeutics, Inc., Seattle, Washington 98134, USA.
SO Hybridoma, (2000 Jun) 19 (3) 249-57.
Journal code: 8202424. ISSN: 0272-457X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200012
ED Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001207
AB Prostate-specific membrane antigen (**PSMA**) is a 750-amino acid glycoprotein highly expressed in malignant prostate tissues. **PSMA** reacts with the murine monoclonal **antibody** 7E11.C5, whose binding epitope has been mapped to the N-terminal of the protein distributed on the cytoplasmic side of the plasma membrane. We have

developed murine monoclonal **antibodies** specific for extracellular epitopes of **PSMA**. Three of these **antibodies**--1G9, 3C6, and 4D4--display distinct binding properties consistent with their recognition of conformational epitopes within native **PSMA**. Results indicate this panel of **antibodies** binds to native full-length **PSMA**, but not to fusion proteins containing portions of the linear sequence of the protein. **Antibody** binding is greatly reduced upon heat denaturation of native **PSMA**, and these **antibodies** do not detect **PSMA** by Western blot. Immunoprecipitation experiments demonstrate the ability of each to bind to full-length **PSMA** as well as PSM', a form of the protein missing the first 57 amino acids. These results indicate each **antibody** is specific for an epitope within the extracellular domain, a region spanning residues 44-750. Flow cytometric experiments indicate strong specific binding to live LNCaP cells. **Antibody** inhibition studies demonstrate that these **antibodies** recognize at least two distinct epitopes. Taken together, the results demonstrate that these **antibodies** are specific for native protein conformational epitopes within the extracellular domain. Their properties, in particular strong binding to live cancer cells, make them ideal candidates that are clearly superior to linear sequence epitope specific **antibodies** for in vivo applications.

CT Check Tags: Female; Male
Animals
***Antibodies, Monoclonal: CH, chemistry**
***Antibodies, Monoclonal: IP, isolation & purification**
Antibodies, Monoclonal: ME, metabolism
***Antibody Specificity**
*Antigens, Surface
Blotting, Western
Carboxypeptidases: CH, chemistry
*Carboxypeptidases: IM, immunology
Carboxypeptidases: ME, metabolism
Enzyme-Linked Immunosorbent Assay
Epitopes: AN, analysis
*Epitopes: IM, immunology
Glutamate Carboxypeptidase II
Humans
Hybridomas
Immunoglobulin G: AN, analysis
Mice
Mice, Inbred A
Mice, Inbred BALB C
Organ Specificity: IM, immunology
Prostate: EN, enzymology
*Prostate: IM, immunology
Prostatic Neoplasms: IM, immunology
Protein Conformation
Protein Denaturation
Research Support, Non-U.S. Gov't
Tumor Cells, Cultured

CN 0 (**Antibodies**, Monoclonal); 0 (Antigens, Surface); 0 (Epitopes); 0 (Immunoglobulin G); EC 3.4.- (Carboxypeptidases); EC 3.4.17.21 (Glutamate Carboxypeptidase II); EC 3.4.17.21 (glutamate carboxypeptidase II, human)

L4 ANSWER 10 OF 20 MEDLINE on STN DUPLICATE 4
AN 2001031762 MEDLINE
DN PubMed ID: 10970725
TI Comparison of telomerase activity and GSTP1 promoter methylation in ejaculate as potential screening tests for prostate cancer.
AU Suh C I; Shanafelt T; May D J; Shroyer K R; Bobak J B; Crawford E D; Miller G J; Markham N; Glode L M

CS University of Colorado Health Sciences Center and University of Colorado Cancer Center, Denver, CO 80262, USA.
SO Molecular and cellular probes, (2000 Aug) 14 (4) 211-7.
Journal code: 8709751. ISSN: 0890-8508.
CY ENGLAND: United Kingdom
DT (EVALUATION STUDIES)
Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200011
ED Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001120
AB New diagnostic tools are needed for the early detection of prostatic cancer. The molecular detection of prostate cancer cells in ejaculates was evaluated using complementary PCR-based methods. LNCaP cells, a cell line derived from prostatic carcinoma, were spiked into normal seminal ejaculates and the prostatic epithelial component of the specimens was **isolated** by immunomagnetic bead sorting, using a monoclonal **antibody** to prostate-specific membrane antigen (**PSMA**). Ejaculates from nine patients with a recent diagnosis of prostate cancer were processed in a similar fashion, using LNCaP-spiked aliquots as an internal positive control. Telomerase expression was evaluated by the telomeric repeat amplification protocol (TRAP) and glutathione S-transferase gene promoter (GSTP1) hypermethylation was evaluated by methylation-sensitive restriction endonuclease digestion and PCR amplification. Telomerase activity was detected in LNCaP cells recovered from normal seminal ejaculates but was not found in all nine samples from patients with prostate cancer. The sensitivity of GSTP1 analysis was similar to telomerase analysis for the detection of LNCaP cells from normal ejaculate samples but was positive in ejaculates from four out of nine patients with prostate cancer. GSTP1 DNA methylation status is more sensitive than telomerase analysis for the detection of malignant cells in seminal ejaculates from patients with prostate cancer.

CT Check Tags: Comparative Study; Male
DNA Methylation
Ejaculation
*Glutathione Transferase: GE, genetics
Humans
*Isoenzymes: GE, genetics
Mass Screening: MT, methods
Promoter Regions (Genetics)
*Prostatic Neoplasms: DI, diagnosis
*Prostatic Neoplasms: GE, genetics
Reference Values
Research Support, Non-U.S. Gov't
Spermatozoa: PH, physiology
Telomerase: AN, analysis
*Telomerase: ME, metabolism
Tumor Cells, Cultured
CN 0 (Isoenzymes); EC 2.5.1.18 (Glutathione Transferase); EC 2.5.1.18 (glutathione S-transferase pi); EC 2.7.7.- (Telomerase)

L4 ANSWER 11 OF 20 MEDLINE on STN DUPLICATE 5
AN 2000391693 MEDLINE
DN PubMed ID: 10833385
TI Generation of a baculovirus recombinant prostate-specific membrane antigen and its use in the development of a novel protein biochip quantitative immunoassay.
AU Xiao Z; Jiang X; Beckett M L; Wright G L Jr
CS Department of Microbiology and Molecular Cell Biology, Eastern Virginia Medical School, Norfolk, Virginia 23507, USA.
NC CA85067 (NCI)

SO Protein expression and purification, (2000 Jun) 19 (1) 12-21.
Journal code: 9101496. ISSN: 1046-5928.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200008
ED Entered STN: 20000824
Last Updated on STN: 20000824
Entered Medline: 20000814
AB Prostate-specific membrane antigen (**PSMA**) is a 100-kDa transmembrane glycoprotein identified by the monoclonal **antibody** 7E11-C5.3 from the human prostate tumor cell line LNCaP. Because of its significant upregulation in androgen refractory and metastatic prostate cancers, **PSMA** may be a useful prognostic biomarker and a target for developing novel therapeutic strategies. However, the lack of abundant pure **PSMA** protein and the low efficacy in immunoaffinity **isolation** from LNCaP cells have hampered the development of clinical assays. In order to obtain a renewable and reliable source of pure antigen, we used the baculovirus/insect cell system to express and purify a recombinant **PSMA**. A recombinant baculovirus containing a 6x histidine-tagged **PSMA** gene was generated, from which rPSMA was expressed and purified using cobalt-chelating affinity chromatography. The purity and correct molecular size of rPSMA were demonstrated by gel electrophoresis and mass spectrometry. Glycosidase digestions showed that the oligosaccharides on rPSMA are primarily N-linked high-mannose type. Although the glycosylation is different from the native **PSMA**, it did not affect the immunoreactivity of rPSMA to **antibodies** specific for either the intra- or the extracellular domains of **PSMA**. Finally, the purified rPSMA was successfully used to develop a quantitative **PSMA** immunoassay using the novel ProteinChip surface-enhanced laser desorption/ionization mass spectrometry technology.

CT Animals
Antibodies, Monoclonal
Antigens, Neoplasm: BL, blood
***Antigens, Neoplasm: IP, isolation & purification**
Antigens, Neoplasm: ME, metabolism
*Antigens, Surface
Baculoviridae: GE, genetics
Blotting, Western
Carboxypeptidases: BL, blood
***Carboxypeptidases: IP, isolation & purification**
Carboxypeptidases: ME, metabolism
Cell Line
Chromatography, Affinity
Genetic Vectors
Glutamate Carboxypeptidase II
Glycosylation
Humans
Immunoassay: MT, methods
Lepidoptera: CY, cytology
Recombinant Fusion Proteins: BL, blood
***Recombinant Fusion Proteins: IP, isolation & purification**
Recombinant Fusion Proteins: ME, metabolism
Research Support, Non-U.S. Gov't
Research Support, U.S. Gov't, P.H.S.
Spectrometry, Mass, Matrix-Assisted Laser Desorption-Ionization: MT, methods
CN 0 (**Antibodies**, Monoclonal); 0 (Antigens, Neoplasm); 0 (Antigens, Surface); 0 (Genetic Vectors); 0 (Recombinant Fusion Proteins); EC 3.4.- (Carboxypeptidases); EC 3.4.17.21 (Glutamate Carboxypeptidase II); EC 3.4.17.21 (glutamate carboxypeptidase II, human)

L4 ANSWER 12 OF 20 EMBASE COPYRIGHT (c) 2005 Elsevier B.V. All rights reserved on STN

AN 1999359102 EMBASE

TI **Isolation** and characterization of monoclonal **antibodies** specific for the extracellular domain of prostate specific membrane antigen.

AU Murphy G.P.; Greene T.G.; Tino W.T.; Boynton A.L.; Holmes E.H.

CS G.P. Murphy, Northwest Hospital, Pacific Northwest Cancer Foundation, Northwest Biotherapeutics, Seattle, WA, United States

SO Journal of Urology, (1999) Vol. 160, No. 6 II, pp. 2396-2401.
Refs: 27
ISSN: 0022-5347 CODEN: JOURAA

CY United States

DT Journal; Article

FS 016 Cancer
026 Immunology, Serology and Transplantation
028 Urology and Nephrology
037 Drug Literature Index

LA English

SL English

ED Entered STN: 19991029
Last Updated on STN: 19991029

AB Purpose: Monoclonal **antibodies** specific for protein epitopes of prostate specific membrane antigen (**PSMA**) expressed on the external surface of prostatic epithelial cells were prepared to provide material for use in the diagnosis or treatment of prostatic cancer. Materials and Methods: Mice were immunized with LNCaP cell membranes followed by purified **PSMA** before fusion. Hybridomas were screened by reactivity with purified **PSMA**. Resulting **antibodies** were characterized by enzyme-linked immunosorbent assay, Western blot and fluorescence-activated cell sorter analyses. Results: Monoclonal **antibody** producing hybridomas designated 3E11, 3C2, 4E10-1.14, 3C9 and 1G3 were obtained which displayed specificities for differing regions of the extracellular domain of the **PSMA** protein. These **antibodies** reacted strongly with **PSMA** from multiple sources and specifically stained unfixed **PSMA** expressing cells by flow cytometric analysis. Conclusions: The **antibodies** obtained displayed strong reactivity and specificity for extracellular epitopes of **PSMA**. These **antibodies** will have value in future diagnostic and therapeutic applications focusing on **PSMA** as a target antigen.

CT Medical Descriptors:
*prostate cancer: DT, drug therapy
***antibody production**
antigen expression
prostate epithelium
hybridoma
cancer screening
enzyme linked immunosorbent assay
immunoblotting
fluorescence activated cell sorter
flow cytometry
nonhuman
mouse
controlled study
animal cell
article
priority journal
Drug Descriptors:
***monoclonal antibody: DT, drug therapy**
*prostate specific antigen: EC, endogenous compound

L4 ANSWER 13 OF 20 MEDLINE on STN

AN 1999332515 MEDLINE
DN PubMed ID: 10404436
TI Expression and purification of prostate-specific membrane antigen in the baculovirus expression system and recognition by prostate-specific membrane antigen-specific T cells.
AU Lodge P A; Childs R A; Monahan S J; McLean J G; Sehgal A; Boynton A L; Salgaller M L; Murphy G P
CS Northwest Biotherapeutics, L.L.C., WA 98125, USA.
SO Journal of immunotherapy (Hagerstown, Md. : 1997), (1999 Jul) 22 (4) 346-55.
Journal code: 9706083. ISSN: 1524-9557.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199909
ED Entered STN: 19991012
Last Updated on STN: 19991012
Entered Medline: 19990928
AB Antigen-specific immunotherapy of cancer depends on a consistent source of well-defined protein antigen. Production of recombinant protein offers the obvious solution to this problem but few comparisons of recombinant and native proteins in cellular immune assays have been reported. We report expression of a putative immunotherapy antigen, prostate-specific membrane antigen (**PSMA**), in insect cells using a baculovirus vector. T cells stimulated with recombinant **PSMA** or native **PSMA** derived from the LNCaP cell line recognized both native **PSMA** and recombinant, baculoviral **PSMA**. These data indicate that **PSMA** produced in Sf9 cells is immunologically cross-reactive with native **PSMA** and therefore suitable for immunotherapy as it is recognized by both cellular and humoral immune responses.
CT Check Tags: Comparative Study; Male
Antibody Formation
Antigens, CD3: AN, analysis
Antigens, CD3: IM, immunology
Antigens, CD4: AN, analysis
Antigens, CD4: IM, immunology
Antigens, CD8: AN, analysis
Antigens, CD8: IM, immunology
*Baculoviridae: CH, chemistry
Baculoviridae: GE, genetics
Baculoviridae: IM, immunology
Blotting, Western
Cell Membrane: IM, immunology
Genetic Vectors
Humans
Immunity, Cellular
Immunotherapy: MT, methods
*Prostate-Specific Antigen: IM, immunology
***Prostate-Specific Antigen: IP, isolation & purification**
*Prostatic Neoplasms: IM, immunology
Prostatic Neoplasms: TH, therapy
Protein Biosynthesis
Recombination, Genetic
Sensitivity and Specificity
*T-Lymphocytes: IM, immunology
Tumor Cells, Cultured
CN 0 (Antigens, CD3); 0 (Antigens, CD4); 0 (Antigens, CD8); 0 (Genetic Vectors); EC 3.4.21.77 (Prostate-Specific Antigen)

L4 ANSWER 14 OF 20 MEDLINE on STN
AN 2000092458 MEDLINE
DN PubMed ID: 10628836

TI PSMA mimotope isolated from phage displayed peptide library can induce PSMA specific immune response.
AU Zhu Z Y; Zhong C P; Xu W F; Lin G M; Ye G Q; Ji Y Y; Sun B; Yeh M
CS Shanghai Institute of Cell Biology, Chinese Academy of Sciences.
SO Cell research, (1999 Dec) 9 (4) 271-80.
Journal code: 9425763. ISSN: 1001-0602.
CY China
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200002
ED Entered STN: 20000229
Last Updated on STN: 20000229
Entered Medline: 20000216
AB Prostate-specific membrane antigen (PSMA) is a cell surface glycoprotein expressed predominantly in prostate secretory acinar epithelium and prostate cancer cells as well as in several extraprostatic tissues. Mouse monoclonal antibody 4G5 specific to the extracellular domain of PSMA was used to screen two phage displayed peptide libraries (9aa linear and 9aa cys library). Three 4G5-reactive phagotopes were identified. Sequence analysis of isolated clones demonstrated that the interaction motif "VDPA/SK" has high homology to 719-725aa on PSMA. Immunohistochemical staining of the prostate cancer sample with the PSMA-mimic phagotope (mimotope) immunized serum antibodies demonstrate that the mimotope isolated from the phage displayed peptide libraries can induce PSMA specific immune response in vivo.
CT Check Tags: Male
Animals
*Antigens, Neoplasm: IM, immunology
Antigens, Neoplasm: IP, isolation & purification
*Antigens, Surface
*Carboxypeptidases: IM, immunology
Carboxypeptidases: IP, isolation & purification
Chromatography, Affinity
Epitopes, B-Lymphocyte: IM, immunology
Glutamate Carboxypeptidase II
Humans
Mice
Mice, Inbred C57BL
Molecular Mimicry
Peptide Library
Prostate-Specific Antigen: AN, analysis
*Prostate-Specific Antigen: IM, immunology
Prostatic Neoplasms: CH, chemistry
Prostatic Neoplasms: IM, immunology
Research Support, Non-U.S. Gov't
Sequence Analysis
CN 0 (Antigens, Neoplasm); 0 (Antigens, Surface); 0 (Epitopes, B-Lymphocyte); 0 (Peptide Library); EC 3.4.- (Carboxypeptidases); EC 3.4.17.21 (Glutamate Carboxypeptidase II); EC 3.4.17.21 (glutamate carboxypeptidase II, human); EC 3.4.21.77 (Prostate-Specific Antigen)

L4 ANSWER 15 OF 20 MEDLINE on STN DUPLICATE 6
AN 1999402364 MEDLINE
DN PubMed ID: 10475379
TI Detection of prostatic specific membrane antigen messenger RNA using immunobead reverse transcriptase polymerase chain reaction.
AU Ghossein R A; Osman I; Bhattacharya S; Ferrara J; Fazzari M; Cordon-Cardo C; Scher H I
CS Department of Pathology, Memorial Sloan-Kettering Cancer Center, New York, NY 10021, USA.
NC CA78611-02 (NCI)
SO Diagnostic molecular pathology : American journal of surgical pathology,

part B, (1999 Jun) 8 (2) 59-65.
Journal code: 9204924. ISSN: 1052-9551.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199911
ED Entered STN: 20000111
Last Updated on STN: 20000111
Entered Medline: 19991101
AB The present study was performed to detect circulating prostatic carcinoma (PC) cells using a novel three-step immunobead reverse transcriptase (RT) polymerase chain reaction (PCR) assay for prostatic specific membrane antigen (**PSMA**) messenger RNA (mRNA). The sensitivity and specificity of this technique was assessed and the incidence of immunobead RT-PCR positivity correlated with progressive metastatic disease and serum prostatic specific antigen (PSA) levels. Fifty peripheral blood (PB) samples from 46 patients with PC were incubated with magnetic beads coated with Ber-EP4 **antibody** directed against the human epithelial antigen a membrane antigen widely expressed by epithelial cells. The epithelial cell-enriched magnetic fraction was then subjected to mRNA **isolation** using oligo-deoxythymidine (dT) magnetic beads. Nested RT-PCR for **PSMA** was performed on the mRNA oligo-dT complex and the identity of the RT-PCR products was confirmed by Southern blotting. Twenty-one PB samples from 8 control subjects without PC were also evaluated. Three-step immunobead **PSMA** RT-PCR was able to detect one PC cell per 1 mL of PB. The positivity rate of the RT-PCR assay was significantly higher (11 of 25; 44%) in patients with metastatic tumor than in patients with non-metastatic disease (1 of 21; 5%) (P = 0.003). In patients with metastatic PC, RT-PCR positivity was much higher in patients with progressive disease (10 of 13; 77%) than in patients with responding or stable disease (1 of 12; 8%) (P = 0.001). There was a statistically significant correlation between immunobead **PSMA** PCR positivity and high levels of serum PSA (P = 0.005). All control subjects without PC tested negative for **PSMA** PCR. The three-step immunobead RT-PCR for **PSMA** can detect circulating PC cells with high specificity and sensitivity. Preliminary data show a strong correlation between immunobead PCR positivity, the presence of progressive metastatic disease, and high levels of serum PSA.
CT Check Tags: Male
Antigens, Surface: ME, metabolism
Blotting, Southern
*Carboxypeptidases: BL, blood
Carboxypeptidases: GE, genetics
Electrophoresis, Agar Gel
Glutamate Carboxypeptidase II
Humans
Immunomagnetic Separation
Neoplasm Circulating Cells: ME, metabolism
Prostate-Specific Antigen: BL, blood
*Prostatic Neoplasms: BL, blood
Prostatic Neoplasms: DI, diagnosis
Prostatic Neoplasms: ME, metabolism
RNA, Messenger: BL, blood
Research Support, Non-U.S. Gov't
Research Support, U.S. Gov't, P.H.S.
*Reverse Transcriptase Polymerase Chain Reaction: MT, methods
Sensitivity and Specificity
Tumor Cells, Cultured
*Tumor Markers, Biological
CN 0 (Antigens, Surface); 0 (RNA, Messenger); 0 (Tumor Markers, Biological); 0 (human epithelial antigen-125); EC 3.4.- (Carboxypeptidases); EC 3.4.17.21 (Glutamate Carboxypeptidase II); EC 3.4.17.21 (glutamate carboxypeptidase II, human); EC 3.4.21.77 (Prostate-Specific Antigen)

L4 ANSWER 16 OF 20 MEDLINE on STN
AN 1999025849 MEDLINE
DN PubMed ID: 9809977
TI Identification, purification, and subcellular localization of prostate-specific membrane antigen PSM' protein in the LNCaP prostatic carcinoma cell line.
AU Grauer L S; Lawler K D; Marignac J L; Kumar A; Goel A S; Wolfert R L
CS Hybritech Incorporated, Beckman Coulter, Inc., San Diego, California 92196-9006, USA.
SO Cancer research, (1998 Nov 1) 58 (21) 4787-9.
Journal code: 2984705R. ISSN: 0008-5472.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199811
ED Entered STN: 19990106
Last Updated on STN: 20000303
Entered Medline: 19981118
AB An alternatively spliced variant of prostate-specific membrane antigen (**PSMA**) designated PSM' was originally described following identification of its mRNA in normal prostate. We have purified the PSM' protein from LNCaP cells using two immunoaffinity columns in tandem. The first column contained a monoclonal **antibody** (7E11) that was reactive with the NH2 terminus of **PSMA**, which specifically depleted the LNCaP lysate of full-length **PSMA**. The nonbinding fraction was then passed over a second column composed of a monoclonal **antibody** (PEQ226.5), the epitope of which was located within the 134-437 domain of **PSMA** and shared with PSM'. The protein eluted from the second immunoaffinity column produced a Mr 95,000 band on SDS-PAGE, which was slightly lower than the full-length **PSMA** at Mr 100,000. The band was NH2-terminally sequenced through 15 residues, and the assigned sequence coincided with the predicted sequence for PSM' protein minus the first two NH2 terminus amino acids. The PSM' protein, therefore, began with residue 60 of **PSMA** (alanine). LNCaP cells were fractionated, and PSM' was localized to the cytoplasm.
CT Check Tags: Male
Animals
***Antigens, Neoplasm: IP, isolation & purification**
*Antigens, Surface
Carboxypeptidases: AN, analysis
Carboxypeptidases: GE, genetics
***Carboxypeptidases: IP, isolation & purification**
Cell Membrane: CH, chemistry
Cytoplasm: CH, chemistry
Glutamate Carboxypeptidase II
Humans
Mice
Mice, Inbred BALB C
Molecular Weight
*Prostatic Neoplasms: CH, chemistry
Prostatic Neoplasms: UL, ultrastructure
RNA, Messenger: AN, analysis
Tumor Cells, Cultured
CN 0 (Antigens, Neoplasm); 0 (Antigens, Surface); 0 (RNA, Messenger); EC 3.4.- (Carboxypeptidases); EC 3.4.17.21 (Glutamate Carboxypeptidase II); EC 3.4.17.21 (glutamate carboxypeptidase II, human)

L4 ANSWER 17 OF 20 MEDLINE on STN DUPLICATE 7
AN 1999032303 MEDLINE
DN PubMed ID: 9817391
TI **Isolation** and characterization of monoclonal **antibodies** specific for the extracellular domain of prostate specific membrane

antigen.
AU Murphy G P; Greene T G; Tino W T; Boynton A L; Holmes E H
CS Northwest Hospital, Pacific Northwest Cancer Foundation and Northwest Biotherapeutics, Seattle, Washington, USA.
SO Journal of urology, (1998 Dec) 160 (6 Pt 2) 2396-401.
Journal code: 0376374. ISSN: 0022-5347.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 199812
ED Entered STN: 19990115
Last Updated on STN: 20000303
Entered Medline: 19981211
AB PURPOSE: Monoclonal **antibodies** specific for protein epitopes of prostate specific membrane antigen (**PSMA**) expressed on the external surface of prostatic epithelial cells were prepared to provide material for use in the diagnosis or treatment of prostatic cancer. MATERIALS AND METHODS: Mice were immunized with LNCaP cell membranes followed by purified **PSMA** before fusion. Hybridomas were screened by reactivity with purified **PSMA**. Resulting **antibodies** were characterized by enzyme-linked immunosorbent assay, Western blot and fluorescence-activated cell sorter analyses. RESULTS: Monoclonal **antibody** producing hybridomas designated 3E11, 3C2, 4E10-1.14, 3C9 and 1G3 were obtained which displayed specificities for differing regions of the extracellular domain of the **PSMA** protein. These **antibodies** reacted strongly with **PSMA** from multiple sources and specifically stained unfixed **PSMA** expressing cells by flow cytometric analysis. CONCLUSIONS: The **antibodies** obtained displayed strong reactivity and specificity for extracellular epitopes of **PSMA**. These **antibodies** will have value in future diagnostic and therapeutic applications focusing on **PSMA** as a target antigen.
CT Check Tags: Female
Animals
***Antibodies, Monoclonal: IP, isolation & purification**
Blotting, Western
*Carboxypeptidases: IM, immunology
Epitopes: IM, immunology
Extracellular Space
Glutamate Carboxypeptidase II
Mice
Mice, Inbred BALB C
Research Support, Non-U.S. Gov't
CN 0 (**Antibodies**, Monoclonal); 0 (Epitopes); EC 3.4.- (Carboxypeptidases); EC 3.4.17.21 (Glutamate Carboxypeptidase II)

L4 ANSWER 18 OF 20 MEDLINE on STN DUPLICATE 8
AN 1998362085 MEDLINE
DN PubMed ID: 9694964
TI Molecular characterization of human brain N-acetylated alpha-linked acidic dipeptidase (NAALADase).
AU Luthi-Carter R; Barczak A K; Speno H; Coyle J T
CS Laboratory of Molecular and Developmental Neuroscience, Massachusetts General Hospital-East, Charlestown, Massachusetts, USA.
NC MH-572901 (NIMH)
MH/NS-31862 (NIMH)
SO Journal of pharmacology and experimental therapeutics, (1998 Aug) 286 (2) 1020-5.
Journal code: 0376362. ISSN: 0022-3565.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals

EM 199809
ED Entered STN: 19980910
Last Updated on STN: 20000303
Entered Medline: 19980902
AB N-Acetylated alpha-linked acidic dipeptidase (NAALADase) is a neuropeptidase that may modulate glutamatergic neurotransmission. Independent of its characterization in the nervous system, one form of NAALADase was shown to be expressed at high levels in human prostatic adenocarcinomas, and it was designated the prostate-specific membrane antigen (**PSMA**). The NAALADase/**PSMA** gene is known to produce multiple mRNA splice forms, and based on previous immunohistochemical evidence, it had been assumed that the human brain and prostate expressed different isoforms of the enzyme. Because **PSMA** is being actively pursued as a target for autoimmune and cytotoxic targeting strategies to treat prostate cancer, the rigorous comparison of the two forms of the enzyme remained an important but untested question. To assess similarities and/or differences between human brain NAALADase and **PSMA**, we compared the two molecules using criteria of activity, immunoreactivity and sequences of the corresponding mRNAs. NAALADase from human cerebellar **isolates** displayed a kinetic profile and pharmacological sensitivities similar to **PSMA**. Also, Northern hybridization to **PSMA** cDNA detected indistinguishable sets of 2.8-, 4.0- and 6.0-kb RNA species in human brain and the LNCaP prostatic tumor cell line. In addition, the monoclonal **antibody** 7E11-C5 directed against the prostatic form of the enzyme immunoprecipitated 82% of human cerebellar NAALADase activity. Moreover, reverse transcription-polymerase chain reaction cloning of cerebellar cDNAs indicated that the human brain and prostate express a common mRNA splice form. Therefore, we conclude that the form of NAALADase also known as **PSMA** is expressed in brain and comprises a significant fraction of brain NAALADase activity.
CT *Antigens, Surface: ME, metabolism
Blotting, Northern
*Brain: EN, enzymology
*Carboxypeptidases: ME, metabolism
Cell Line
Cloning, Molecular
Glutamate Carboxypeptidase II
Humans
Kinetics
Polymerase Chain Reaction
Precipitin Tests
RNA, Messenger: BI, biosynthesis
RNA, Messenger: CH, chemistry
Research Support, Non-U.S. Gov't
Research Support, U.S. Gov't, P.H.S.
CN 0 (Antigens, Surface); 0 (RNA, Messenger); EC 3.4.- (Carboxypeptidases); EC 3.4.17.21 (Glutamate Carboxypeptidase II); EC 3.4.17.21 (glutamate carboxypeptidase II, human)

L4 ANSWER 19 OF 20 MEDLINE on STN DUPLICATE 9
AN 1999006617 MEDLINE
DN PubMed ID: 9792131
TI Prostate cancer and prostate bed SPECT imaging with ProstaScint: semiquantitative correlation with prostatic biopsy results.
AU Sodee D B; Ellis R J; Samuels M A; Spirnak J P; Poole W F; Riester C; Martanovic D M; Stonecipher R; Bellon E M
CS Department of Radiology, MetroHealth Medical Center/Case Western Reserve University, Cleveland, Ohio, USA.
SO Prostate, (1998 Nov 1) 37 (3) 140-8.
Journal code: 8101368. ISSN: 0270-4137.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English

FS Priority Journals
EM 199811
ED Entered STN: 19990106
Last Updated on STN: 19990106
Entered Medline: 19981112
AB BACKGROUND: ProstaScint (Cytogen Corporation, Princeton, NJ) murine monoclonal **antibody** imaging is FDA-approved for imaging of prostate cancer patients at high risk for metastatic disease and patients postprostatectomy with a rising serum prostate-specific antigen (PSA) level. ProstaScint is a murine monoclonal **antibody** which targets prostate-specific membrane antigen (**PSMA**). **PSMA** expression is upregulated in primary and metastatic prostate cancer. FDA Cytogen (Princeton, NJ) protocol studies using 111indium-labeled ProstaScint revealed correlation between areas of increased concentration in the prostate and biopsy-proven tumors in patients imaged pretherapy. METHODS: In our study, four transverse, single-photon emission tomography (SPECT) images were **isolated** and regions of interest were selected and correlated with pretherapy prostate biopsy results. Prostate cancer and normal tissue prostate/muscle background (P/M) ratios were derived, so that postprostatectomy/radiation therapy patients could be evaluated for the presence of residual prostate cancer. Twenty-three pretherapy prostate cancer patients with quadrant/sextant biopsies had SPECT 96-hr 111indium ProstaScint pelvic images. The four transverse 1-cm slices above the midline penile blood pool were chosen, and four to six 27-30-pixel regions of interest were placed over the prostate bed. The background muscle region of interest was placed over the external obturator muscle region. The P/M ratio was calculated and compared to the quadrant/sextant prostatic biopsy result. The same procedure was applied to 17 posttherapy prostate cancer patients with rising PSA. RESULTS: In the 23 pretherapy prostate cancer patients, there was a correlation between the P/M ratio of at least 3.0 in 32 of 35 prostatic cancer biopsy regions, and there was correlation with P/M ratios less than 3.0 in 82 of 89 negative biopsy regions. Seventeen posttherapy patients underwent ProstaScint studies. Six underwent biopsy, with typically one biopsy site per patient. All 6 had P/M ratios greater than 3.0 in the biopsied region. Five out of six biopsies revealed residual prostate cancer. CONCLUSIONS: A prostate/muscle ratio was developed from 111indium ProstaScint regions of interest obtained on 1-cm SPECT transverse slices through the prostate bed in 23 patients preprostatic cancer therapy. A P/M ratio above 3.0 correlated in the majority of positive cases, and a P/M ratio below 3.0 was demonstrated in negative prostatic biopsy cases. The P/M ratio of above 3.0 or below 3.0 also separated those posttherapy prostate cancer patients with rising PSA who had residual prostate carcinoma in the prostate bed.
CT Check Tags: Male
Aged
Antibodies, Monoclonal: DU, diagnostic use
Biopsy
Humans
Indium Radioisotopes: DU, diagnostic use
Middle Aged
*Prostate: PA, pathology
Prostate-Specific Antigen: IM, immunology
Prostatic Neoplasms: PA, pathology
*Prostatic Neoplasms: RI, radionuclide imaging
*Tomography, Emission-Computed, Single-Photon: MT, methods
CN 0 (**Antibodies**, Monoclonal); 0 (Indium Radioisotopes); EC 3.4.21.77 (Prostate-Specific Antigen)

L4 ANSWER 20 OF 20 MEDLINE on STN DUPLICATE 10
AN 96186631 MEDLINE
DN PubMed ID: 8602402
TI Measurement of prostate-specific membrane antigen in the serum with a new **antibody**.

AU Murphy G P; Tino W T; Holmes E H; Boynton A L; Erickson S J; Bowes V A; Barren R J; Tjoa B A; Misrock S L; Ragde H; Kenny G M

CS Pacific Northwest Cancer Foundation, Cancer Research Division, Northwest Hospital, Seattle, Washington, USA.

SO Prostate, (1996 Apr) 28 (4) 266-71.
Journal code: 8101368. ISSN: 0270-4137.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199605

ED Entered STN: 19960517
Last Updated on STN: 19970203
Entered Medline: 19960503

AB Work to date has identified prostate-specific membrane antigen (**PSMA**) as a membrane-bound glycoprotein with high specificity for prostatic epithelial cells. **PSMA** reacts with the monoclonal **antibody** 7E11.C5, which is present in serum, seminal fluid, and prostatic epithelial cells, and is increased in its expression in the presence of a hormone refractory state associated with prostatic cancer. This report confirms these results and further documents the presence of the monoclonal **antibody** 3F5.4G6, which reacts with the extracellular domain of **PSMA**. This region of **PSMA** is also an element present in a truncated version of the protein, so-called PSM'. Immune precipitation with either 7E11.C5 or 3F5.4G6 yields an **isolated** protein species that are reactive with the reciprocal **antibody** in Western blot analysis. Thus, 3F5.4G6 recognizes the same **PSMA** protein as does 7E11.C5, but at different epitopes on essentially opposite ends of the molecule. These two **antibodies** are well suited for use in a sandwich immunoassay, either one as a capture or detection **antibody**. Current work on this is underway. This report also confirms that 7E11.C5 Western blots for **PSMA** are negative with normal human brain tissue. The monoclonal **antibody** 9H10 does not react with 3F5.4G6 or with 7E11.C5 in studies conducted herein. Moreover, 3F5.4G6 reacts with **PSMA** found in the LNCaP cell line, but not DU-145 or PC3, which lack **PSMA**.

CT Check Tags: Male
Amino Acid Sequence
Animals
Antibodies, Monoclonal: AN, analysis
***Antibodies, Monoclonal: IM, immunology**
Antibodies, Monoclonal: IP, isolation & purification
Blotting, Western: MT, methods
Humans
Hybridomas
Mice
Mice, Inbred BALB C
Molecular Sequence Data
Multiple Myeloma: PA, pathology
Precipitin Tests
***Prostate-Specific Antigen: BL, blood**
Prostate-Specific Antigen: CH, chemistry
Prostate-Specific Antigen: IM, immunology
Prostatic Neoplasms: PA, pathology
Radioimmunoassay: MT, methods
Research Support, Non-U.S. Gov't
Tumor Cells, Cultured

CN 0 (**Antibodies**, Monoclonal); EC 3.4.21.77 (Prostate-Specific Antigen)